

## Purchasing Receipts

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit	Aging Days	Past Due	Total	Supplier Name
P0041405	TWM001-VU	2	1	Net 30	M304P0.675W.091	304/316 Pipe .675 OD x .091 Wall Thickness : MATERIAL: TP304/TP316 STAINLESS STEEL SEAMLESS PIPE AS PER ASTM A312/ASME SA312 receive ft				24	11/9/2018	23		S126571	Stock	11/9/2018	\$ 5.00 / ft	0		\$115.84	TW Metals
		3			M304TR0.500W.049	304 Round Tube .500 X .049W : MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft				48		60		S126572	Stock	11/9/2018	\$ 3.44 / ft	0		\$206.31	TW Metals
		4			M304TR0.750W.049	304 Round Tube .750 X .049W : MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft				192		200		S126573	Stock	11/9/2018	\$ 2.58 / ft	0		\$515.80	TW Metals
		5			M304TR0.875W.065	304 Round Tube .875 X .065W : MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft				12		20		S126574	Stock	11/9/2018	\$ 4.20 / ft	0		\$84.00	TW Metals
		6			M304TR1.250W.125	304 Round Tube 1.250 X .125W : MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft				24		40		S126575	Stock	11/9/2018	\$ 6.15 / ft	0		\$246.00	TW Metals

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit	Aging Days	Past Due	Total	Supplier Name
		7			M6061T6T0.3125W.058	Aluminum Tube .3125 X .058W : MATERIAL: 6061- T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ- A-225/8 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft				100			108	S126576	Stock	11/9/2018	\$ 3.08 / ft	0		\$332.52	TW Metals
		8			M6061T6T0.625W.125	6061-T6 Round Tube 0.625 X.125W : MATERIAL: 6061- T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ- A-225/8 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft				12		12		S126577	Stock	11/9/2018	\$ 5.15 / ft	0		\$61.80	TW Metals
		9			M6061T6T0.375W.035	6061-T6 Round Tube .375 X.035W : MATERIAL: 6061- T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ- A-225/8 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft				48		48		S126578	Stock	11/9/2018	\$ 3.40 / ft	0		\$163.20	TW Metals
										Total:	460	511								\$1,725.47	



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

# PURCHASE ORDER PO041405

**Supplier:** TWM001-VU  
TW Metals  
PO Box 933014  
Atlanta, GA 31193-3014 USA  
Phone: 585 768 5600  
Fax: 585 768 5601

**Ship To:** 1270 Aberdeen Street  
Hawkesbury  
ON  
K6A 1K7 Canada  
Phone: 613-632-5200

**PO No:** PO041405

**PO Date:** 10/22/18

**Due Date:** 10/30/18

**Purchase Order**

**Revision:**

**Revision Date:**

**Ship-To Contact:** Lavoie, Chantal  
clavoie@dartaero.com

**Via:** Ground

**Pymt Terms:** Net 30

**Freight Terms:**

**Special Comments:**

**E-MAILED**  
OCT 23 2018

## Items

Line Item	Job	Part	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
1		M2024T3T1.000W.065		2024T3 Tubing 1" OD x 0.65" Thick : MATERIAL: 2024-T3 SEAMLESS ALUMINUM TUBING SPECIFICATION; WW-T-700/3, AMS 4088 OR AMS-WW-T-700/3 OR ASTM B210 receive ft	Firmed	-	10/30/18	312 ft	0 ft	312 ft	\$7.50/ft	\$2,340.00
Line Item Note 26 pcs of 12 ft												
2		M304P0.675W.091		304/316 Pipe .675 OD x .091 Wall Thickness : MATERIAL: TP304/TP316 STAINLESS STEEL SEAMLESS PIPE AS PER ASTM A312/ASME SA312 receive ft	Firmed	-	10/30/18	24 ft	0 ft	24 ft	\$5.00/ft	\$120.00
✓ AT								23.167		AT 18/11/09		
3		M304TR0.500W.049		304 Round Tube .500 X .049W : MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft	Firmed	-	10/30/18	48 ft	0 ft	48 ft	\$3.4385/ft	\$165.05
✓ AT								60ft		AT 18/11/09		



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

# PURCHASE ORDER PO041405

## Items

Line Item	Job	Part	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
4 ✓ AT		M304TR0.750W.049		304 Round Tube .750 X .049W : MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft	Firmed	-	10/30/18	192 ft ✓ 200ft	0 ft	192 ft	\$2.579/ft	\$495.17
5 ✓ AT		M304TR0.875W.065		304 Round Tube .875 X .065W : MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft	Firmed	-	10/30/18	12 ft ✓ 20ft	0 ft	12 ft	\$4.20/ft	\$50.40
6 ✓ AT		M304TR1.250W.125		304 Round Tube 1.250 X .125W : MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft	Firmed	-	10/30/18	24 ft ✓ 40ft	0 ft	24 ft	\$6.15/ft	\$147.60
7 ✓ AT		M6061T6T0.3125W.058		Aluminum Tube .3125 X .058W : MATERIAL: 6061- T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ- A-225/8 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft	Firmed	-	10/30/18	100 ft ✓ 108ft	0 ft	100 ft	\$3.0789/ft	\$307.89
8 ✓ AT		M6061T6T0.625W.125		6061-T6 Round Tube 0.625 X.125W : MATERIAL: 6061- T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ- A-225/8 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft	Firmed	-	10/30/18	12 ft ✓ 12ft	0 ft	12 ft	\$5.15/ft	\$61.80





Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

# **PURCHASE ORDER** **PO041405**

## **Items**

Line Item	Job	Part	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
9 <i>AT</i>		M6061T6T0.375W.035		6061-T6 Round Tube .375 X.035W : MATERIAL: 6061- T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ- A-225/8 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft	Firmed	-	10/30/18	48 ft <i>✓</i>	0 ft <i>48 ft</i>	48 ft <i>M</i>	\$3.40/ft <i>18/11/09</i>	\$163.20

**Grand Total: \$3,851.11**

## **Order Notes**

### **Procurement Quality Clauses**

A005 right of entry  
A012 chemical and physical test report  
A016 personnel qualification  
A017 raw material identification (as applicable)  
A026 certification of material conformance  
A041 quality management system  
A042 dart notification by supplier  
A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit [www.dartaerospace.com](http://www.dartaerospace.com) for further explanation.

Plex 10/22/18 9:05 AM dart.lavoie.chantal



O'Neal High-Performance Metals Group



Packing  
Slip

ORDER NO.: 80970737

FROM: CHIC

PAGE 1

BT NUMBER: 1203820

NET WGT:

151.292 REQ.DATE: 11/09/18 EARLY

LD TO:

SHIP TO:

RT AEROSPACE LTD

DART AEROSPACE LTD

70 ABERDEEN ST

1270 ABERDEEN ST

WESBURY ON

HAWKS BURY ON

NADA

ONTARIO CANADA

CN K6A 1K7

CN K6A 1K7

LESPERSON:

MIKE ANDERSON

SHIP BY:

11/06/18

RMS:

NET 30 DAYS

VIA:

COMMON CARRIER

D.B.:

SHIPPING POINT

FREIGHT:

PREPAID

BT ORD NO.:

PO041405

RELEASE NO.:

RECEIVING PHONE:

NE ITEM DESCRIPTION

01 43260 D2024-T3 1 OD X .065 WA

WIDTH

LENGTH

12 FT ML

N#

ORD QTY

INVOICE QTY

SHIPPED QTY

WT

PCS

312.000 FT

312.000 FT

312.000 FT

71.436

26

RT#: M2024T3T1.000W.065

1 TEST REPORTS REQUIRED \*\*

1 CERTS REQUIRED \*\*

CN: EAR99

Export License: NLR

:49394608 HT:F002819470001

PC: 26

C:UNITED STATES

MFG:UNITED STATES

CUSTOMER QTY:  
SLB/CL:227053

Expiration Date: 0/00/00  
312.000 UOM FT

02 38420 SMLS 304/L A-312 3/8 SCH 40

17/24 FT

N#

ORD QTY

INVOICE QTY

SHIPPED QTY

WT

PCS

20.000 FT

23.167 FT

23.167 FT

13.271

1

RT#: M304P0.675W.091

1 TEST REPORTS REQUIRED \*\*

1 CERTS REQUIRED \*\*

CN: 2B999.g

Export License: NLR

:49383265 HT:11P046

PC: 1

C:CHINA

MFG:CHINA

CUSTOMER QTY:  
SLB/CL:LWMK92

Expiration Date: 0/00/00  
23.167 UOM 1

03 37241 SMLS CD 304/L A269 1-1/4 X .120WA

20 FT

N#

ORD QTY

INVOICE QTY

SHIPPED QTY

WT

PCS

40.000 FT

40.000 FT

40.000 FT

57.917

2

RT#: M304RT1.250W.125

1 TEST REPORTS REQUIRED \*\*

1 CERTS REQUIRED \*\*

CN: 2B999.g

Export License: NLR

Expiration Date: 0/00/00

THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE  
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL  
REVIEW.



O'Neal High-Performance Metals Group



Packing Slip

ORDER NO.: 80970737

FROM: CHIC

PAGE 2

ST NUMBER: 1203820

NET WGT:

151.292 REQ.DATE: 11/09/18 EARLY

LD TO:

RT AEROSPACE LTD

70 ABERDEEN ST

WESBURY ON

JADA

CN K6A 1K7

SHIP TO:

DART AEROSPACE LTD

1270 ABERDEEN ST

HAWKS BURY ON

ONTARIO CANADA

CN K6A 1K7

LESPERSON:

MIKE ANDERSON

RMS:

NET 30 DAYS

O.B.:

SHIPPING POINT

ST ORD NO.:

PO041405

SHIP BY:

11/06/18

VIA:

COMMON CARRIER

FREIGHT:

PREPAID

RELEASE NO.:

RECEIVING PHONE:

JE ITEM DESCRIPTION

:49385117

HT:N180219AS15

PC: 2

C:CHINA

MFG:CHINA

WIDTH

LENGTH

CUSTOMER QTY:

40.000

UOM FT

SLB/CL:-

04 41723 D6061-T6 5/16 OD X .058 WA

12 FT ML

N#

ORD QTY

108.000 FT

INVOICE QTY

108.000 FT

SHIPPED QTY

108.000 FT

WT

5.897

PCS

9

RT#: M6061T6T0.3125W.058

1 TEST REPORTS REQUIRED \*\*

1 CERTS REQUIRED \*\*

CN: EAR99

Export License: NLR

:49380591

HT:2927553

PC: 9

C:UNITED STATES

MFG:UNITED STATES

Expiration Date: 0/00/00

CUSTOMER QTY:

108.000

UOM FT

SLB/CL:2927553

05 42588 D6061-T6 5/8 OD X .125 WA

12 FT ML

N#

ORD QTY

12.000 FT

INVOICE QTY

12.000 FT

SHIPPED QTY

12.000 FT

WT

2.771

PCS

1

RT#: M6061T6T0.625W.125

1 TEST REPORTS REQUIRED \*\*

1 CERTS REQUIRED \*\*

CN: EAR99

Export License: NLR

:49383418

HT:F002625360001

PC: 1

C:UNITED STATES

MFG:UNITED STATES

Expiration Date: 0/00/00

CUSTOMER QTY:

12.000

UOM FT

SLB/CL:225211

OKERS KUEHNE AND NAGEL LTD

EA TYPE OF PKG  
C REDDICRATE

PKGS  
1.000

PACK INFO  
GRS WEIGHT  
121.000

WIDTH  
8.0000

LENGTH  
150.0000

HGHT  
8

CUBIC FT 5.5556

THANK YOU FOR THIS ORDER

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PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL  
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Oneal High-Performance Metals Group



Packing  
Slip

ORDER NO.: 80970737

FROM: CHIC

PAGE 3

ST NUMBER: 1203820

NET WGT:

151.292 REQ.DATE: 11/09/18 EARLY

LD TO:

SHIP TO:

RT AEROSPACE LTD

DART AEROSPACE LTD

70 ABERDEEN ST

1270 ABERDEEN ST

WESBURY ON

HAWKS BURY ON

JADA

CN K6A 1K7

ONTARIO CANADA

CN K6A 1K7

PERSON:

MIKE ANDERSON

SHIP BY:

11/06/18

MS:

NET 30 DAYS

VIA:

COMMON CARRIER

D.B.:

SHIPPING POINT

FREIGHT:

PREPAID

ST ORD NO.:

PO041405

RELEASE NO.:

RECEIVING PHONE:

JE ITEM DESCRIPTION

REDDICRATE

WIDTH

LENGTH

1.000

129.000

4.0000

284.0000

4

CUBIC FT

2.6296

2.000

250.000

: RR

000-

UNLOAD TYPE: NONE SPECIFIED

DATE SHIPPED \_\_\_\_\_

DATE FILLED \_\_\_\_\_

**HANK YOU FOR THIS ORDER**

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE  
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REVIEW.



O'Neal High-Performance Metals Group



**Packing  
Slip**

ORDER NO.: 80970737

FROM: CHIC

PAGE 4

ST NUMBER: 1203820 NET WGT:

LD TO:

RT AEROSPACE LTD

70 ABERDEEN ST

WESBURY ON

NADA

CN K6A 1K7

151.292 REQ.DATE: 11/09/18 EARLY

SHIP TO:

DART AEROSPACE LTD

1270 ABERDEEN ST

HAWKS BURY ON

ONTARIO CANADA

CN K6A 1K7

LESPERSON:

MIKE ANDERSON

RMS:

NET 30 DAYS

O.B.:

SHIPPING POINT

ST ORD NO.:

PO041405

A:

COMMON CARRIER

EIGHT:

PREPAID

LEASE NO.:

DEIVING PHONE:

SHIP BY:

11/06/18

235 TUBEWAY

CAROL STREAM

IL 60188

Tw Metals MSDS data is available on our web site at [www.twmetals.com](http://www.twmetals.com). MSDS data can be found under the Technical Resources Tab, Product Statistics data and the TW Metals MSDS's heading. If you do not have web site access you may telephone 610-458-1300 and we will mail or fax a copy of our current MSDS data to your location."

### "CERTIFICATE OF CONFORMANCE"

Tw Metals certifies that the material supplied on this purchase order and retained in the heat/lot number referenced above has been manufactured, inspected, and tested in accordance with the material specification. These records are on file at Tw Metals. Packaging material for shipments to Europe and China consists of manufactured wood products and complies with the European emergency measures for coniferous non-manufactured wood packing material"

**Electronically Generated Document-Valid Without Signature**

Date: 11/06/18

These commodities have been exported from the United States in accordance with the U.S. export control laws, export administrations regulations. No version contrary to U.S. law prohibited.

**HANK YOU FOR THIS ORDER**

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL REVIEW.



O'Neal High-Performance Metals Group



Packing Slip

ORDER NO.: 60668340

FROM: CRAN

PAGE 1

CUST NUMBER: 1203820

NET WGT:

100.851 REQ.DATE: 11/12/18 EARLY

SOLD TO:

SHIP TO:

DART AEROSPACE LTD

DART AEROSPACE LTD

1270 ABERDEEN ST

1270 ABERDEEN ST

HAWKESBURY ON

HAWKESBURY ON

CANADA

ONTARIO CANADA

CN K6A 1K7

CN K6A 1K7

SALESPERSON:

MIKE ANDERSON

SHIP BY:

11/07/18

TERMS:

NET 30 DAYS

VIA:

COMMON CARRIER

F.O.B.:

SHIPPING POINT

FREIGHT:

PREPAID

CUST ORD NO.:

PO041405

RELEASE NO.:

RECEIVING PHONE:

LINE ITEM DESCRIPTION

0001 36506 SMLS CD 304/L A269 1/2 OD X .049 WA

WIDTH

LENGTH  
20' ML

CLN#

ORD QTY

INVOICE QTY

SHIPPED QTY

WT

PCS  
3

60.000 FT

60.000 FT

60.000 FT

14.155

PART#: M304TR0.500W.049

\*\* 1 TEST REPORTS REQUIRED \*\*

\*\* 1 CERTS REQUIRED \*\*

ECCN: 2B999.g

Export License: NLR

PO:49380769 HT:N171009AS12

PC: 3

Expiration Date: 0/00/00

MLT:CHINA

MFG:CHINA

CUSTOMER QTY:  
SLB/CL:180419769-10

UOM

0002 36860 SMLS CD 304/L A269 3/4 OD X .049 WA

20' CL

CLN#

ORD QTY

INVOICE QTY

SHIPPED QTY

WT

PCS  
10

200.000 FT

200.000 FT

200.000 FT

73.344

PART#: M304TR0.75W.049

\*\* 1 TEST REPORTS REQUIRED \*\*

\*\* 1 CERTS REQUIRED \*\*

ECCN: 2B999.g

Export License: NLR

PO:49385121 HT:N180118AS01

PC: 10

Expiration Date: 0/00/00

MLT:CHINA

MFG:CHINA

CUSTOMER QTY:  
SLB/CL:18MTC-0725121-07

UOM

0003 36969 SMLS CD 304/L A269 7/8 OD X .065 WA

20' CL

CLN#

ORD QTY

INVOICE QTY

SHIPPED QTY

WT

PCS  
1

20.000 FT

20.000 FT

20.000 FT

11.244

PART#: M304TR0.875W.065

\*\* 1 TEST REPORTS REQUIRED \*\*

\*\* 1 CERTS REQUIRED \*\*

ECCN: 2B999.g

Export License: NLR

Expiration Date: 0/00/00

1

THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE  
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL  
REVIEW.  
<http://www.twmetals.com/invoice-terms.html>



O'Neal High-Performance Metals Group



**Packing  
Slip**

ORDER NO.: 60668340 FROM: CRAN PAGE 2

CUST NUMBER: 1203820 NET WGT: 100.851 REQ.DATE: 11/12/18 EARLY  
SOLD TO: SHIP TO:  
DART AEROSPACE LTD DART AEROSPACE LTD  
1270 ABERDEEN ST 1270 ABERDEEN ST  
HAWKESBURY ON HAWKESBURY ON  
CANADA ONTARIO CANADA

CN K6A 1K7

CN K6A 1K7

SALESPERSON: MIKE ANDERSON  
TERMS: NET 30 DAYS  
F.O.B.: SHIPPING POINT  
CUST ORD NO.: PO041405

SHIP BY: 11/07/18  
VIA: COMMON CARRIER  
FREIGHT: PREPAID  
RELEASE NO.:  
RECEIVING PHONE:

LINE ITEM DESCRIPTION

PO:49377294 HT: YX1709608 PC: 1 WIDTH LENGTH UOM  
MLT:CHINA MFG:CHINA CUSTOMER QTY:  
SLB/CL:180127-10

0004 41879 D6061-T6 3/8 OD X .035 WA

12 FT ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	48.000 FT	<u>48.000 FT</u>	48.000 FT	2.108	4

PART#: M6061T6T0.375W.035

\*\* 1 TEST REPORTS REQUIRED \*\*

\*\* 1 CERTS REQUIRED \*\*

ECCN: EAR99

Export License: NLR

Expiration Date: 0/00/00

PO:49392322 HT: F002772010001 PC: 4

CUSTOMER QTY:

UOM

MLT:UNITED STATES MFG:UNITED STATES

SLB/CL:226651

BROKERS KUEHNE AND NAGEL LTD

AREA	TYPE OF PKG	PKGS	GRS WEIGHT	WIDTH	LENGTH	HGHT
NEW PEN REDDICRATE		1.000	160.851	4.0000	246.0000	5
Orders In Package - 1		Box No -	TWPK18044189		CUBIC FT	2.8472
		1.000	160.851			

BY: Tom Weaver  
RT 000-

UNLOAD TYPE: NONE SPECIFIED

DATE SHIPPED \_\_\_\_\_

DATE FILLED \_\_\_\_\_

**THANK YOU FOR THIS ORDER**

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O'Neal High-Performance Metals Group



**Packing  
Slip**

ORDER NO.: 60668340

FROM: CRAN

PAGE 3

CUST NUMBER: 1203820 NET WGT:  
SOLD TO:  
DART AEROSPACE LTD  
1270 ABERDEEN ST  
HAWKESBURY ON  
CANADA

100.851 REQ.DATE: 11/12/18 EARLY  
SHIP TO:  
DART AEROSPACE LTD  
1270 ABERDEEN ST  
HAWKSBURY ON  
ONTARIO CANADA

CN K6A 1K7

CN K6A 1K7

SALESPERSON: MIKE ANDERSON  
TERMS: NET 30 DAYS  
F.O.B.: SHIPPING POINT  
CUST ORD NO.: PO041405  
VIA: COMMON CARRIER  
FREIGHT: PREPAID  
RELEASE NO.:  
RECEIVING PHONE:

SHIP BY: 11/07/18  
27 ENGLEHARD DRIVE  
MONROE TWP NJ 08831

"TW Metals MSDS data is available on our web site at [www.twmetals.com](http://www.twmetals.com). MSDS data can be found under the Technical Resources Tab, Product Statistics & Data and the TW Metals MSDS's heading. If you do not have web site access you may telephone 610-458-1300 and we will mail or fax a copy of our current MSDS data to your location."

### "CERTIFICATE OF CONFORMANCE"

"TW Metals certifies that the material supplied on this purchase order and contained in the heat/lot number referenced above has been manufactured, inspected, and tested in accordance with the material specification. These records are on file at TW Metals. Packaging material for shipments to Europe and China consists of manufactured wood products and complies with the European emergency measures for coniferous non-manufactured wood packing material"

Electronically Generated Certificate-Valid without signature Date: 11/07/18

These commodities have been exported from the United States in accordance with the U.S. export control laws, export administrations regulations. Diversion contrary to U.S. law prohibited.

**THANK YOU FOR THIS ORDER**

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<http://www.twmetals.com/invoice-terms.html>

# KAISER ALUMINUM

FABRICATED PRODUCTS

*Beit in Class*

## CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
6573 W. WILLIS ROAD  
CHANDLER, AZ 85226

CUSTOMER PO NUMBER: M49394608-1		CUSTOMER PART NUMBER: 43260		PRODUCT DESCRIPTION: Drawn Seamless Tube/Pipe	
KAISER ORDER NUMBER: 227053	LINE ITEM: 001	SHIP DATE: 09/28/2018	KAISER LOT NUMBER: F00281947	ALLOY: 2024	TEMPER: T3
WEIGHT SHIPPED: 379.000 LB	QUANTITY: 138.000 PCS	B/L NUMBER: 231219	DIAM/DAF/THKNS:	WIDTH:	LENGTH: 12.000 FT
SHIP TO:  TW METALS INC 235 WEST TUBEWAY DRIVE CAROL STREAM, IL 60188 USA			SOLD TO:  TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA		

### Actual Physical Properties

REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON%IACS	BEND
F00281947	0001	0001	71.4	50.0	24.5	N/A	N/A	N/A

### Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.50	0.50	4.90	0.90	1.80	0.10	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.00	0.00	3.80	0.30	1.20	0.00	0.00	0.00	NA	NA	NA	0.00	0.00
D32229	.13	.19	4.55	.77	1.36	.01	.14	.03	.00	.00	.01	.01	.02

### Applicable Requirements:

Description: OD: 1.0000"; Wall: 0.0650"; Round @  
AMS4088K AMS-WW-T-700/3A ASTM B210-12  
This Product Complies to FAR BAA, DFARS BAA, FAR TAA  
COMPLIES TO DIN EN 10204 JAN 2005  
No Weld Repair. Mercury Free.



### Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA  
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA  
(DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5  
TRADE AGREEMENTS).

Plant Serial: 00029646  
Kaiser Order Number: 227053  
Line Item: 001

# KAISER ALUMINUM FABRICATED PRODUCTS

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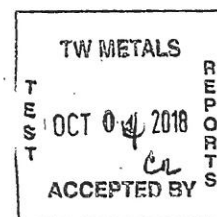
## CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

### CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager



# KAISER ALUMINUM FABRICATED PRODUCTS

## CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

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FABRICATED PRODUCTS, LLC  
6573 W. WILLIS ROAD  
CHANDLER, AZ 85226

CUSTOMER PO NUMBER: M49392322-1		CUSTOMER PART NUMBER: 41879		PRODUCT DESCRIPTION: Drawn Seamless Tube/Pipe	
KAISER ORDER NUMBER: 226651	LINE ITEM: 001	SHIP DATE: 08/14/2018	KAISER LOT NUMBER: F00277201	ALLOY: 6061	TEMPER: T6
WEIGHT SHIPPED: 249.000 LB	QUANTITY: 470.000 PCS	B/L NUMBER: 230672	DIAM/DAF/THKNS: 	WIDTH: 	LENGTH: 12.000 FT
SHIP TO: TW METALS INC 27 ENGLEHARD DRIVE EXIT 8A OFF NJ TPK MONROE TWP, NJ 08831 USA			SOLD TO: TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA		

### Actual Physical Properties

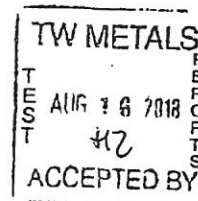
REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON%IACS	BEND
F00277201	0001	0001	46.6	39.1	19.5	N/A	N/A	N/A

### Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot.
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
D21756	.63	.30	.24	.04	.95	.10	.05	.03	.00	.00	.00	.01	.02

### Applicable Requirements:

Description: OD: 0.3750"; Wall: 0.0350"; Round @  
AMS4082P AMS-WW-T-700/6C ASTM B210-12  
WE TAKE EXCEPTION TO PARA. 5.2.1., Per AMS4082P, WAS NOT OILED.  
This Product Complies to FAR BAA, DFARS BAA, FAR TAA  
COMPLIES TO DIN EN 10204 JAN 2005  
No Weld Repair. Mercury Free.



### Miscellaneous Notes

MANUFACTURED IN USA. MELTED IN USA  
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA  
(DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5  
TRADE AGREEMENTS).

# **KAISER ALUMINUM**

**FABRICATED PRODUCTS**

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6573 W. WILLIS ROAD  
CHANDLER, AZ 85226

## **CERTIFIED TEST REPORT**

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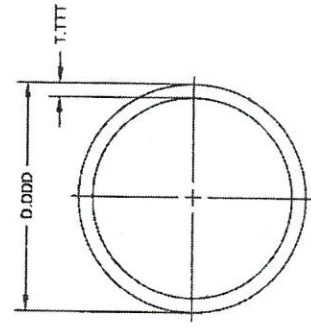
### **CERTIFICATION**

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager



RELEASED  
2013-07-02



PURCHASE MATERIAL: 6061-T6 / 62/T6510/T6511 SEAMLESS TUBING

SPECIFICATION: WW-T-7008  
OR QQ-A-200/8 OR QQ-A-225/8  
OR AMS 4080 OR AMS 4082 OR AMS 4083  
OR ASTM B210 OR ASTM B241

PART NUMBER: M6061T6T1D.DDDW/T.TTT  
OD | WALL

WHERE "D.DDD" = OD IN INCHES  
"T.TTT" = WALL THICKNESS  
EG. 3/8" OD X 0.058 WALL = M6061T6T1D.375W0.058  
MATERIAL TOLERANCE: PER ANSI H35.2

C	COMPLETE REFORMAT. ADDED T6510 & T6511. ADDED AMS 4083, ASTM B210 & ASTM B241	AJS	13.06.12
B	ADDED MATERIAL TOLERANCE	CP	04.01.23
A	ADD QQ-A-200/8 & QQ-A-225/8	DS	01.06.21
REV.	NEW ISSUE	BY	DATE
DESIGN	AJS		
DRAWN	AJS		
CHECKED	W		
MFG. APPR.	W		
APPROVED	W		
DE APPR.	W		
DATE	13.06.12		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. M6061T6T			
TITLE 6061-T6 TUBING			
SCALE NTS			
REV. C SHEET 1 OF 1			
COPYRIGHT © 2001 BY DART AEROSPACE LTD (THIS DOCUMENT IS UNCLASSIFIED AND IS NOT TO BE RELEASED OR DISSEMINATED WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD)			



# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061 T6 TO 375W.025

PO / BATCH NO.: P0041405 / S126578

DATE: 18/11/09

MATERIAL CERT REC'D: Yes

THICKNESS ORDERED: 0.375"

QUANTITY RECEIVED: 48ft

THICKNESS RECEIVED: 0.375"

QUANTITY INSPECTED: 48ft

SHEET SIZE ORDERED: —

QUANTITY REJECTED: 0

SHEET SIZE RECEIVED: —

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	AMS 4082
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	F00277201 0001
CORRECT MATERIAL IDENTIFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

*testers located in the Quality Office*

<b>QC 18 INSPECTION</b>		<b>ENGINEERING SIGNOFF (if required)</b>	
INSPECTED BY: <u>AT</u>		SIGNED OFF BY: _____	
DATE: <u>18/11/09</u>		DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in





# JIAXING MT STAINLESS STEEL CO.,LTD

## MILL TEST CERTIFICATE

EN10204 3.1 CERTIFICATE

ISO 9001: 2015 TUV SUD CERT REGISTRATION No.: 01 100 095954  
PED/97/23/CE EURO CERT CERTIFICATE NO:CN.CE.1110S1-02/14



Precisely Right.

CERTIFICATE NO.: 18MTC-180419769-10

SALES CONTRACT NO.: M 49380769

COMMODITY: STAINLESS STEEL SEAMLESS TUBE

SPECIFICATION: ASTM A269-15a, ASTM A213-17, ASME SA213-17

PURCHASER: KASUGAI CO., LTD.

ORDER: M 49380769

DATE OF REPORT: 2018-4-19

Steel Grade	Heat No.	Dimensions			Quantity		Process	Delivery Condition	Macroscopic Inspection	
		O.D. (INCH)	W.T. (INCH)	Length (FT)	FT	Piece			End Cut	Appearance
TP304/TP304L	N171009AS12	1/2	0.049	20	10460	523	Cold-Drawn	Pickled & 320 Grit polish	Passed	Passed

### Chemical Composition (W.T. %)

Element	C	Si	Mn	P	S	Cr	Ni	Mo	Ti	-	-	-	-	-
Requirements	≤0.035	≤1.00	≤2.00	≤0.045	≤0.030	18.0-20.0	8.0-11.0	-	-	-	-	-	-	-
Ladle Analysis	0.014	0.38	1.34	0.031	0.001	18.21	8.04	-	-	-	-	-	-	-

### Mechanical Properties

Test Item	Y.S. (MPa) Rp0.2	T.S. (MPa) Rm	EL. (%) In2in	Reduction of Area Z (%)	Hardness HRC	Cold Bend Test	Flaring Test	Flattening Test	P.M.I. TEST
Requirements	≥205	≥515	≥35	-	≤80	-	-	e=0.09	-
Test Results	290	605	60	-	77	Passed	Passed	Passed	Passed

Test Item	Non Destructive Tests		Remarks:
	Eddy Current Test		
Requirements	ASTM E 426		<div>PT STAINLESS STEEL QUALITY CONTROL DEP.</div> <ul style="list-style-type: none"><li>- ASTM A269-15a, ASTM A213-17, ASME SA213-17</li><li>- TUBES TESTED PER ASTM A1016/1016M</li><li>- SOLUTION HEAT TREATMENT: 1050°C X 1.5m/min</li><li>- NO WELD REPAIR WAS PERFORMED.</li><li>- PMI TESTING DONE ON EACH TUBE - SATISFACTORY</li><li>- IN COMPLIANCE WITH NACE MR0175/ISO 15156-2015</li><li>- FREE FROM MERCURY CONTAMINATION</li><li>- MATERIAL IS FREE FROM RADIOACTIVITY</li><li>- VISUAL CHECK IS SATISFACTORY</li><li>- COUNTRY OF ORIGIN: CHINA</li><li>- COUNTRY OF MELT: CHINA</li></ul>
Test Results	Passed		

TW METALS

TEST

JUN 08 2018

Eric T.

REPORTS



1. WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN TESTED AND THE TEST RESULTS ARE IN COMPLIANCE WITH THE TERMS OF THE PURCHASE ORDER OR CONTRACT  
2. THE CERTIFICATE SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF THE COMPANY.

Prepared by:

李振峰

Approved by:

Eric T.

**SPECIFICATION CONTROL DRAWING**

PURCHASE MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING

SPECIFICATION: ASTM A213 OR ASME SA213 OR ASTM A269

WALL THICKNESS TOLERANCE PER ASTM A269 AS FOLLOWS:

OD (IN)	PERMISSIBLE	WALL THICKNESS
UP TO 1/2	±0.005	±15%
1/2 TO 1 1/2 EXCL.	±0.005	±10%
1 1/2 TO 3 1/2 EXCL.	±0.010	±10%
3 1/2 TO 5 1/2 EXCL.	±0.015	±10%
5 1/2 TO 8 EXCL.	±0.030	±10%

PART NUMBER: M304TRD.DDD|W|TTT|WALL

WHERE "D.DDD" = OUTSIDE DIAMETER IN INCHES  
AND "TTT" = WALL THICKNESS IN INCHES

EG. 0.375" OD X 0.065" WALL TUBING = M304TRD 375W.065

RELEASED  
07/27/13

B	REFORMAT DWG. ADD SPECS (2N (B-1), REF PAR 08-020A	CP	08 10 20
A	NEW ISSUE	DS	01 08 08
REV	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR			
APPROVED			
DE APPR			
DATE	08.10.20		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. M304TR			
TITLE 304/316 ROUND TUBING			
SHEET 1 OF 1			
SCALE NTS			
REV. B			
COPYRIGHT © 2001 BY DART AEROSPACE LTD			

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304TR0.500W.049  
 DATE: 18/11/04

PO / BATCH NO.: P0041405 / S126572

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 6044  
 QUANTITY INSPECTED: 6044  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.500"  
 THICKNESS RECEIVED: 0.500"  
 SHEET SIZE ORDERED: —  
 SHEET SIZE RECEIVED: —

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<input checked="" type="checkbox"/> N	
CORRECT FINISH	<input checked="" type="checkbox"/> Y	N	
CORROSION	Y	<input checked="" type="checkbox"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> Y	N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/> Y	N	ASTM A269
CORRECT THICKNESS	<input checked="" type="checkbox"/> Y	N	
PHOTO REQUIRED	Y	<input checked="" type="checkbox"/> N	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> Y	N	MT: N171009 A512
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> Y	N	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> Y	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	<input checked="" type="checkbox"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	<input checked="" type="checkbox"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D	WEBSTER
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>AT</u>	SIGNED OFF BY: _____	
DATE: <u>18/11/04</u>	DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in





# JIAXING MT STAINLESS STEEL CO.,LTD

## MILL TEST CERTIFICATE

EN10204 3.1 CERTIFICATE

ISO 9001: 2015 TUV SUD CERT REGISTRATION No.: 01 100 095954  
PED/97/23/CE EURO CERT CERTIFICATE NO:CN.CE.1110S1-02/14



Precisely Right.

CERTIFICATE NO.: 18MTC-0725121-07

SALES CONTRACT NO.: M 49385121

COMMODITY: STAINLESS STEEL SEAMLESS TUBE

SPECIFICATION: ASTM A269-15a, ASTM A213-17, ASME SA213-17

PURCHASER: KASUGAI CO., LTD.

ORDER: M 49385121

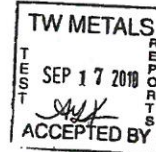
DATE OF REPORT: 2018-7-25

Steel Grade	Heat No.	Dimensions			Quantity		Process	Delivery Condition	Macroscopic Inspection	
		O.D. (INCH)	W.T. (INCH)	Length (FT)	FT	Piece			End Cut	Appearance
TP304/TP304L	N180118AS01	3/4	0.049	20	5200	260	Cold-Drawn	Pickled & 320 Grit polish	Passed	Passed

Chemical Composition (W.T. %)													
Element	C	Si	Mn	P	S	Cr	Ni	Mo	Ti	-	-	-	-
Requirements	≤0.035	≤1.00	≤2.00	≤0.045	≤0.030	18.0-20.0	8.0-11.0	-	-	-	-	-	-
Ladle Analysis	0.017	0.35	1.37	0.036	0.001	18.1	8.01	-	-	-	-	-	-

Mechanical Properties									
Test Item	Y.S. (MPa) Rp0.2	T.S. (MPa) Rm	EL. (%) In2in	Reduction of Area Z (%)	Hardness s	Cold Bend Test	Flaring Test	Flattening Test	P.M.I. TEST
Requirements	≥205	≥515	≥35	-	≤80	-	-	e=0.09	-
Test Results	260	580	50	-	75	Passed	Passed	Passed	Passed

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1. WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN TESTED AND THE TEST RESULTS ARE IN COMPLIANCE WITH THE TERMS OF THE PURCHASE ORDER OR CONTRACT  
2. THE CERTIFICATE SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF THE COMPANY.

Prepared by:

*[Signature]*

Approved by:

*[Signature]*

# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING

SPECIFICATION: ASTM A213 OR ASME SA213 OR ASTM A269

WALL THICKNESS TOLERANCE PER ASTM A269 AS FOLLOWS:

OD (IN)	PERMISSIBLE OD TOL (IN)	PERMISSIBLE WALL TOL
UP TO 1/4	±0.005	±15%
1/4 TO 1/2 EXCL.	±0.005	±10%
1/2 TO 3/4 EXCL.	±0.010	±10%
3/4 TO 1 EXCL.	±0.015	±10%
1 TO 2 EXCL.	±0.030	±10%

PART NUMBER:

M304TRD.DDD.W.TTT  
OD WALL

WHERE "D.DDD" = OUTSIDE DIAMETER IN INCHES  
AND "TTT" = WALL THICKNESS IN INCHES

EG. 0.375" OD X 0.065" WALL TUBING = M304TRD 375W.065

RELEASED  
08/23/23

B	REFORMAT DWG. ADD SPECS (ZN 19-1).	CP	08 10 20
A	NEW ISSUE	DS	01 08 08
REV	DESCRIPTION	BY	DATE
DESIGN	DART AEROSPACE LTD		
DRAWN	HAWKESBURY, ONTARIO, CANADA		
CHECKED	DRAWING NO	REV. B	
MFG. APPR	M304TR	SHEET 1 OF 1	
APPROVED	TITLE	SCALE	
DE APPR	304/316 ROUND TUBING	NTS	
DATE	08.10.20	COPYRIGHT © 2021 BY DART AEROSPACE LTD	

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304TR0.750W.049

PO / BATCH NO.: P0041405/5126573

DATE: 18/11/09

MATERIAL CERT REC'D: Yes

THICKNESS ORDERED: 0.750"

QUANTITY RECEIVED: 2004

THICKNESS RECEIVED: 0.750"

QUANTITY INSPECTED: 2004

SHEET SIZE ORDERED: —

QUANTITY REJECTED: —

SHEET SIZE RECEIVED: —

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<input checked="" type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/>	N	
CORROSION	Y	<input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/>	N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/>	N	ASTM A269
CORRECT THICKNESS	<input checked="" type="checkbox"/>	N	
PHOTO REQUIRED	Y	<input checked="" type="checkbox"/>	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/>	N	MT: N180118A501
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/>	N	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/>	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	<input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	<input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D	WEBSTER
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

*testers located in the Quality Office*

<b>QC 18 INSPECTION</b>		<b>ENGINEERING SIGNOFF (if required)</b>	
INSPECTED BY: <u>AT</u>		SIGNED OFF BY: _____	
DATE: <u>18/11/09</u>		DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



## MILL TEST REPORT

Purchaser.: TW METALS-Cranbury				Certificate No.: 2018-02-053					
Contract No.: TWM P.O.No.: M49377294				Date of Issue.: 2018.02.05					
Commodity: Stainless Steel Seamless Tubes		Specifications: ASTM A213-17/ASME SA213-15/ASTM A269-15a EAW							
Process: Cold Drawn		Delivery Condition: OD Polished to 240 Grit							
Steel Grade	Heat Number	Lot Number	Dimensions		Quantity				
TP304/TP304L	YX1709-608	180127-10	7/8"x0.065"x20'		Pieces	Feet			
					50	1,000			
Chemical Composition by Weight (%)									
Element	C	Mn	P	S	Si	Cr	Ni	Mo	Co
Requirements	≤0.035	≤2.00	≤0.045	≤0.030	≤1.00	18.00-20.00	8.00-11.00	-	-
Ladle Analysis	0.025	0.62	0.031	0.002	0.44	18.10	8.05	-	-
Product Analysis	0.026	0.65	0.032	0.002	0.43	18.12	8.10	-	-
Mechanical Properties									
Test Item	Elongation (% in 2")		Tensile Strength (PSI)		Yield Strength (PSI)				
Requirements	≥35		Rm		Rp / 0.2%				
Test Results	64/63		≥75,000		≥30,000				
			84,000/85,000		41,000/43,000				
Test Item	Reduction of Area Z (%)	Hardness	Cold Bend Test	Flaring Test	Flattening Test	Flange Test	P.M.I. Test		
Requirements	-	HRB≤80	-	22%	e=0.09	-	-		
Test Results	-	72/74	-	Passed	Passed	-	OK		
Test Item	Eddy Current Test	Air Underwater Pressure Test	Ultrasonic Test	Intergranular Corrosion Test	Macroscopic Inspection				
Requirements	ASTM E 426	-	-	ASTM A262 E	End Cut	Appearance			
Test Results	Passed	-	-	OK	OK	OK			

ISO 9001:2008 Certified by CAS 117 16 QU 0053-06 ROS

PED Certified by SZUTEST 2195-PED-1526002

## Additional Remarks:

- (1) All tubes annealed to above 1900 Deg F and water quenched below 800 Deg F in 3 minutes
- (2) All tubes tested per ASTM A1016-17
- (3) Materials is NACE MR0103-2007 compliant (per Section 2.5)
- (4) Materials is NACE MR0175/ISO 15156-2003 compliant (per Section 4.2.1)
- (5) In Compliance with EN 10204-3.1
- (6) In Compliance with RoHS Stipulation
- (7) No weld repair performed
- (8) Free from mercury contamination
- (9) Free from radioactive contamination
- (10) Billets melt and pipes/tubes manufactured in China
- (11) All tubes 100% PMI tested
- (12) All tubes 100% Eddy Current tested

CANNOT CERTIFY COMPLIANCE  
FAR BAA / DFARS BAA / FAR TAA



By:

James Shi

James Shi / Manager

Quality Control Department

We hereby certify that this report is true and correct.

Jiangsu Pufa Stainless Steel Tube Co., Ltd.

No. 99, Xuean Middle Road, Dongchen Town, Rugao City, Jiangsu Province, P.R.China





# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING

SPECIFICATION:

ASTM A213 OR ASME SA213 OR ASTM A269

WALL THICKNESS TOLERANCE PER ASTM A269 AS FOLLOWS:

OD (IN)	PERMISSIBLE OD TOL. (IN)	PERMISSIBLE WALL TOL.
UP TO 1/2	±0.005	±15%
1/2 TO 1 1/2, EXCL.	±0.010	±10%
1 1/2 TO 3 1/2, EXCL.	±0.015	±10%
3 1/2 TO 5 1/2, EXCL.	±0.020	±10%
5 1/2 TO 8, EXCL.	±0.030	±10%

PART NUMBER:

M304TR D DDD W TTT  
OD WALL

WHERE "D DDD" = OUTSIDE DIAMETER IN INCHES  
AND "TTT" = WALL THICKNESS IN INCHES

EG. 0.375" OD X 0.065" WALL TUBING = M304TR0 375W.065

RELEASED  
10/18/23

B	REFORMAT DWG. ADD SPECS (2N D8-1).	CP	08.10.20
A	NEW ISSUE	DS	01.08.06
REV	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG APPR			
APPROVED			
DE APPR			
DATE	08.10.20		

DART AEROSPACE LTD	
HAWKESBURY, ONTARIO, CANADA	
DRAWING NO	M304TR
TITLE	304/316 ROUND TUBING
SCALE	NTS
REV. B	SHEET 1 OF 1

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304TR0.875W.065

PO / BATCH NO.: P00414058126574

DATE: 18/11/09

MATERIAL CERT REC'D: Yes

THICKNESS ORDERED: 0.875"

QUANTITY RECEIVED: 20ft

THICKNESS RECEIVED: 0.875"

QUANTITY INSPECTED: 20ft

SHEET SIZE ORDERED: -

QUANTITY REJECTED: 0

SHEET SIZE RECEIVED: -

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/>	
CORRECT FINISH	Y <input checked="" type="checkbox"/> N	
CORROSION	Y <input checked="" type="checkbox"/> N	
CORRECT GRAIN DIRECTION	Y <input checked="" type="checkbox"/> N	
CORRECT MATERIAL PER M-DRAWING	Y <input checked="" type="checkbox"/> N	<u>A57M A213</u>
CORRECT THICKNESS	Y <input checked="" type="checkbox"/> N	
PHOTO REQUIRED	Y <input checked="" type="checkbox"/> N	
CORRECT REF # TO LINK CERT	Y <input checked="" type="checkbox"/> N	<u>MTYX1709-608</u>
CORRECT MATERIAL IDENTIFICATION	Y <input checked="" type="checkbox"/> N	
CORRECT M# ON THE MATERIAL	Y <input checked="" type="checkbox"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="checkbox"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="checkbox"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D	WEBSTER
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

*testers located in the Quality Office*

<b>QC 18 INSPECTION</b>		<b>ENGINEERING SIGNOFF (if required)</b>	
INSPECTED BY: <u>At</u>		SIGNED OFF BY: _____	
DATE: <u>18/11/09</u>		DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# MISCO

## JIAXING MT STAINLESS STEEL CO.,LTD

### MILL TEST CERTIFICATE

EN10204 3.1 CERTIFICATE

ISO 9001: 2015-TUV SUD CERT REGISTRATION No.: 01 100 095954  
PED/97/23/CE EURO CERT CERTIFICATE NO:CN.CE.1110S1-02/14



CERTIFICATE NO.: 18MTC-0518117-07

SALES CONTRACT NO.: M 49385117

COMMODITY: STAINLESS STEEL SEAMLESS TUBE

SPECIFICATION: ASTM A269-15a, ASTM A213-17, ASME SA213-17

PURCHASER: KASUGAI CO., LTD.  
ORDER: M 49385117  
DATE OF REPORT: 2018-5-18

Precisely Right.

Steel Grade	Heat No.	Dimensions			Quantity		Process	Delivery Condition	Macroscopic Inspe	
		O.D. (INCH)	W.T. (INCH)	Length (FT)	FT	Piece			End Cut	Appear
TP304/TP304L	N180219AS15	1-1/4	0.12	20	1700	85	Cold-Drawn	Pickled & 320 Grit polish	Passed	Pass

#### Chemical Composition (W.T. %)

Element	C	Si	Mn	P	S	Cr	Ni	Mo	Ti
Requirements	≤0.035	≤1.00	≤2.00	≤0.045	≤0.030	18.0-20.0	8.0-11.0	-	-
Ladle Analysis	0.023	0.45	0.96	0.037	0.004	18.28	8.08	-	-

#### Mechanical Properties

Test Item	Y.S. (MPa) Rp0.2	T.S. (MPa) Rm	EL. (%) In2in	Reduction of Area Z (%)	Hardness s	Cold Bend Test	Flaring Test	Flattening Test
Requirements	≥205	≥515	≥35	-	≤80	-	-	e=0.09
Test Results	275	605	59	-	75	Passed	Passed	Passed

#### Non Destructive Tests



#### Remarks:

- ASTM A269-15a, ASTM A213-17, ASME SA213-17
- TUBES TESTED PER ASTM A1016
- SOLUTION HEAT TREATMENT: 1050°C X 1.5hr/min
- NO WELD REPAIR WAS PERFORMED.
- PMI TESTING DONE ON EACH TUBE - SATISFACTORY
- IN COMPLIANCE WITH NACE MR0175/ISO 15156-2015
- FREE FROM MERCURY CONTAMINATION
- MATERIAL IS FREE FROM RADIOACTIVITY
- VISUAL CHECK IS SATISFACTORY
- COUNTRY OF ORIGIN: CHINA
- COUNTRY OF MELT: CHINA

#### Eddy Current Test

ASTM E 426

Passed

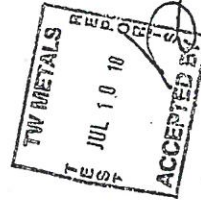
1. WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN TESTED AND THE TEST RESULTS ARE IN COMPLIANCE WITH THE TERMS OF THE PURCHASE ORDER OR CONTRACT  
2. THE CERTIFICATE SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF THE COMPANY.

Prepared by:

34772

Approved by:

5/18





# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING

SPECIFICATION:

ASTM A213 OR ASME SA213 OR ASTM A269

WALL THICKNESS TOLERANCE PER ASTM A269 AS FOLLOWS:

OD (IN)	PERMISSIBLE	PERMISSIBLE
UP TO 1/2	OD TOL (IN)	WALL TOL
1/2 TO 1 1/2 EXCL.	±0.005	±15%
1 1/2 TO 3% EXCL.	±0.005	±10%
3% TO 5% EXCL.	±0.015	±10%
5% TO 8% EXCL.	±0.030	±10%

PART NUMBER:

M304TRD.DDD|W|TTT  
OD | WALL

WHERE "D.DDD" = OUTSIDE DIAMETER IN INCHES  
AND "TTT" = WALL THICKNESS IN INCHES

EG. 0.375" OD X 0.065" WALL TUBING = M304TRD 375W.065

RELEASED  
08/26/23

B	REFORMAT DWG ADD SPECS (2N DB-1)	CP	08.10.20
A	NEW ISSUE	DS	01.06.08
REV	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR			
APPROVED			
DE APPR			
DATE	08.10.20		

DART AEROSPACE LTD		REV. B
HAWKESBURY, ONTARIO, CANADA		SHEET 1 OF 1
DRAWING NO	M304TR	
TITLE	304/316 ROUND TUBING	SCALE
		NTS

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# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304TRI-250W-125  
 DATE: 18/11/12

PO / BATCH NO.: P0041405/S126575

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 40LH  
 QUANTITY INSPECTED: 40LH  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 1.250"  
 THICKNESS RECEIVED: 1.250"  
 SHEET SIZE ORDERED: —  
 SHEET SIZE RECEIVED: —

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/> N	
CORRECT FINISH	Y <input checked="" type="checkbox"/> N	
CORROSION	Y <input checked="" type="checkbox"/> N	
CORRECT GRAIN DIRECTION	Y <input checked="" type="checkbox"/> N	
CORRECT MATERIAL PER M-DRAWING	Y <input checked="" type="checkbox"/> N	ASTM A 269
CORRECT THICKNESS	Y <input checked="" type="checkbox"/> N	
PHOTO REQUIRED	Y <input checked="" type="checkbox"/> N	
CORRECT REF # TO LINK CERT	Y <input checked="" type="checkbox"/> N	MT: N180219AS15
CORRECT MATERIAL IDENTIFICATION	Y <input checked="" type="checkbox"/> N	
CORRECT M# ON THE MATERIAL	Y <input checked="" type="checkbox"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="checkbox"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="checkbox"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

*testers located in the Quality Office*

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>At</u> DATE: <u>18/11/12</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in





CHANGSHU WALSH SPECIALTY STEEL CO.,LTD.

WLPSRW104038

PO# M49383265 AG 01/11/18

# MILL INSPECTION CERTIFICATE

EN 10204 3.1

MILL TEST REPORT

TA CHEN INTERNATIONAL, INC.

This MTR contains 1 page (Page# 1)

Customer: TWMEXT PO#:M49383265 SO#:LWMK92

Item:S44L00C Bundle:WLRW104TA82-12 Heat#:11P046

Item:S44L00C Bundle:WLRW104TA82-15 Heat#:11P046

MTR#:WLPSRW104038.GIF

CUSTOMER: TA CHEN STAINLESS PIPE CO.,LTD.		HEAT NO.: 11P046	
DATE: 20171105		SPECIFICATION: ASTM A312/A337/A376-14/ASME SA312/15 SA376-15	
COMMODITY: STAINLESS STEEL SEAMLESS PIPE		CERTIFICATE NO.: 201711052003205	
DELIVERY CONDITION: COLD FINISHED SOLUTION ANNEALED AND PICKLED		GRADE: TP3040304L	

CHEMICAL COMPOSITION (WT%)																										
ELEMENTS	C	Si	Mn	P	S	Ni	Cr	Mo	N	Cu	Ti	Nb	Co	V	B	Al	Sb	Pb	As	Sh	Fe	Bi	Zr	Al+Ti	PREN	Ferrite content
SPECIFICATION	min	0.000	0.000	0.000	0.000	0.0000	8.000	18.000																		
	max	0.035	0.750	2.000	0.045	0.0300	11.000	20.000																		
RESULTS	0.023	0.420	0.910	0.037	0.0010	8.080	18.250	0.130		0.392																

SIZE	PACKAGE NO.	PIECES	WEIGHT		TS	YS		EL(50mm)	HARDNESS	FLATTENING TEST	FLARING TEST	I.C. TEST	PITTING CORROSION (mg/dm <sup>2</sup> day)	GRAIN SIZE	Lot No.	HYDROSTATIC TEST MPa	EDDY CURRENT TEST	ULTRASONIC TEST
			kg	lb		0.2%	1%											
OD(1) * WT(sch) * LG(mm)																		
3/8"X5"6066-7315	T482-11	132	3070.47	1015	600605	301301	302298	68.568.5	7979	GOOD	/	GOOD	/	/	201709-LG-F31	/	GOOD	/
3/8"X5"6066-7315	T482-12	19	438.22	114	616610	302298	317298	6768	8079.5	GOOD	/	GOOD	/	/	201709-LG-F41	/	GOOD	/
1/4"X5"6066-7315	T482-13	96	2233.07	546	612597	317298	317298	6564	8079	GOOD	/	GOOD	/	/	201709-LG-C82	/	GOOD	/
3/8"X5"6066-7315	T482-15	25	574.15	149	616610	302298	317298	6768	8079.5	GOOD	/	GOOD	/	/	201709-LG-F41	/	GOOD	/
1/4"X5"6066-7315	T482-16	43	985.96	245	612597	317298	317298	6564	8079	GOOD	/	GOOD	/	/	201709-LG-C82	/	GOOD	/
TOTAL:		315	7301.87	2059														

REMARKS:

NACE MR0175-2003

AS PER PROFORMA INVOICE NO. LG5854-S

I.C. TEST PER ASTM A262.02a E MIL-P24681/3 MIL-P11440

NO REPAIR BY WELDING

MATERIAL FREE FROM MERCURY CONTAMINATION

COUNTRY OF MOLT-CHINA, COUNTRY OF MANUFACTURE: CHINA

ET STANDARD PRACTICE: ASTM E426

REFERENCE DISCONTINUITY: DRILLED HOLE

WATER QUENCHED ANNEALING TEMPERATURE: 1060°C

FREE OF RADIATION

TW METALS REPORTS

TESTS JAN 11 18

ACCEPTED BY

1. WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN BEEN MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH THE RESULTS OF THE CONTRACT, AND CONFORM TO THE SPECIFICATION ABOVE.

2. MATERIAL FREE FROM MERCURY CONTAMINATION AND RADIOACTIVE CONTAMINATION

3. NO REPAIR BY WELDING.

4. THE CERTIFICATE SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE WRITTEN APPROVAL OF THE COMPANY.

QUALITY MANAGER

Sum Bin

ADDRESS: 2# HAIYANG ROAD, HAIYU TOWN, CHANGSHU CITY, JIANGSU PROVINCE, CHINA 215519 TEL: +86-512-52566260 FAX: +86-512-52568027

B-2 CS-QM-100000-00E-0201

# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: TP304/TP316 STAINLESS STEEL SEAMLESS PIPE

SPECIFICATION:

ASTM A312, ASME SA312

PART NUMBER:

M304P/D.DDD|W|TTT  
OD | WALL THICKNESS

WHERE "D.DDD" = OUTSIDE DIAMETER IN INCHES PER NPS DESIGNATION (REF TABLE 1)  
AND "TTT" = WALL THICKNESS IN INCHES PER PIPE SCHEDULE (REF TABLE 1)

EG. 3/8 SCHEDULE 40 PIPE = M304P0.675W.081

TABLE 1: DIMENSIONS OF NPS PIPE (REF ANSI B36.10/19)

NPS Designation	Outside Diameter (in)	Pipe Schedule Wall Thickness (in)	
		SCHEDULE 40	SCHEDULE 80
1/8	0.405	0.068	0.095
1/4	0.540	0.088	0.119
3/8	0.675	0.091	0.126
1/2	0.840	0.109	0.147
3/4	1.050	0.113	0.154
1	1.315	0.133	0.179
1-1/4	1.660	0.140	0.191
1-1/2	1.900	0.145	0.200
2	2.375	0.154	0.218
2-1/2	2.875	0.203	0.276
3	3.500	0.216	0.300
3-1/2	4.000	0.226	0.318
4	4.500	0.237	0.337

RELEASED

2017 JUN 19  
ECN 17-590

APPROVED

REV.	NEW ISSUE	DESCRIPTION	CP	BY	DATE
DESIGN	CP	DART AEROSPACE LTD			17.02.24
DRAWN	CP	HAWKESBURY, ONTARIO, CANADA			
CHECKED	ML	DRAWING NO.			
MFG. APPR.	DD	M304P			
APPROVED	WM	TITLE			
DE APPR.	CP	304/316 PIPE			
DATE	17.02.24	SCALE			NTS
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ALL RIGHTS RESERVED. NO PART OF THIS PUBLICATION MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT PERMISSION IN WRITING FROM DART AEROSPACE LTD.					

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304 P0.675W.091  
 DATE: 18/11/12

PO / BATCH NO.: P0041405/5126571

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 23.167 Ltr  
 QUANTITY INSPECTED: 23.167 Ltr  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.675"  
 THICKNESS RECEIVED: 0.675"  
 SHEET SIZE ORDERED: —  
 SHEET SIZE RECEIVED: —

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<u>N</u>	
CORRECT FINISH	<u>Y</u>	N	
CORROSION	Y	<u>N</u>	
CORRECT GRAIN DIRECTION	<u>Y</u>	N	
CORRECT MATERIAL PER M-DRAWING	<u>Y</u>	N	<u>ASTM A312</u>
CORRECT THICKNESS	<u>Y</u>	N	
PHOTO REQUIRED	Y	<u>N</u>	
CORRECT REF # TO LINK CERT	<u>Y</u>	N	<u>HT: 11PD46</u>
CORRECT MATERIAL IDENTIFICATION	<u>Y</u>	N	
CORRECT M# ON THE MATERIAL	<u>Y</u>	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	<u>N</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	<u>N</u>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D	WEBSTER
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>AT</u>	SIGNED OFF BY: _____	
DATE: <u>18/11/12</u>	DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in





A COMPANY OF MUELLER INDUSTRIES

PRECISION TUBE CO.

287 WISSAHICKON AVE.  
NORTH WALES PA 19454

Control No: 6257

## CERTIFIED TEST REPORT

CUSTOMER PURCHASE ORDER NO.	CUST. ORD. NO.	PRECISION TUBE P/N
M 49380591 LINE 001	475790	24A031250580005

**SOLD:** TW METALS  
**TO** 175 TUBEWAY  
FOREST PARK, GA 30298  
UNITED STATES

**SHIP:** TW METALS  
**TO** 175 TUBEWAY  
FOREST PARK, GA 30298  
UNITED STATES

QUANTITY ORD.	DESCRIPTION	QTY. SHIPPED	DATE SHIPPED
3204 FT	METAL - 6061 ALUM TEMPER - T6 SPEC - AMS 4082P ASTM-B-210-12 AMS-WW-T-700/6C LENGTH - 12 FT LGTH TOL +.1250 IN -.0000 IN SHAPE - ROUND FINISH - STRAIGHT EXACT LENGTHS OD .3125 +.0030 -.0030 ID WALL .0580 +.0040 -.0040	3456 FT	12/13/17

## MECHANICAL PROPERTIES

SAMPLE #	TENSILE STRENGTH (P.S.I.)	YIELD STRENGTH (P.S.I.)	ELONGATION IN 2 INCHES (%)	ROCKWELL HARDNESS	AVERAGE GRAIN SIZE (MM.)
1	46,376	41,941	12		
2	45,712	40,899	15		

## DESTRUCTIVE TESTS

Comments: FAR BAA COMPLIES, DFARS BAA COMPLIES, FAR TAA COMPLIES

## NON-DESTRUCTIVE TESTS

EDDY CURRENT: PASS

## CHEMICAL COMPOSITION

ALLOY: 6061		HEAT:		TRACEABILITY #: 2927553					
				RAW MATL VENDOR: PTC13607 - KAISER ALUMINUM INVESTMENTS					
	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Al
Min	0.40		0.15		0.80	0.04			Rem.
Max	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	
OTHER ELEMENTS: 0.05 MAX EACH / 0.15 MAX TOTAL									

We hereby certify that the material has been manufactured and tested in accordance with the requirements of the applicable specifications and descriptions set forth on Precision Tube's sales acknowledgement. During the manufacturing, testing and inspection, the product did not come into direct contact with mercury or any of its compounds, nor with any mercury containing device or process. Test results indicate that the material is compliant with the current revision of the RoHS Directive (2011/65/EU).

DEC 19 2017

49380591

TW METALS

By:

Jennifer James

Quality &amp; Technical Lead

12/13/17

Page: 1 of 1

Melted and Manufactured in USA  
QMS Registered to ISO 9001: 2008

PURCHASE MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING

SPECIFICATION:

WW-T-7006  
OR QQ-A-200/8 OR QQ-A-225/8  
OR AMS 4080 OR AMS 4082 OR AMS 4083  
OR ASTM B210 OR ASTM B241

PART NUMBER:

M6061T6T | D.DDD | W.T. TTT |  
OD WALL

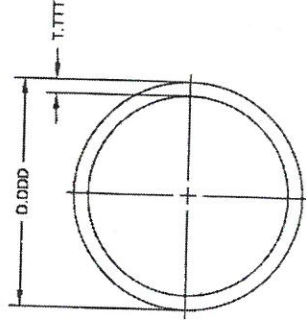
WHERE "D.DDD" = OD IN INCHES

"T.TTT" = WALL THICKNESS

EG. 3.8" OD X 0.058 WALL = M6061T6T0.375W0.058

MATERIAL TOLERANCE:

PER ANSI H35.2 /C



RELEASED  
2013-07-02

C	COMPLETE REFORMAT, ADDED T6510 & T6511. ADDED AMS 4083, ASTM B210 & ASTM B241. ADDED MATERIAL TOLERANCE	AJS	13.06.12
B	ADD QQ-A-200/8 & QQ-A-225/8	CP	04.01.23
A	NEW ISSUE	DS	01.06.21
REV.	DESCRIPTION	BY	DATE
DRAWN	AJS		
CHECKED	AJS		
MFG. APPR.	DRAWING NO. M6061T6T		
APPROVED	TITLE 6061-T6 TUBING		
DE APPR.			
DATE	13.06.12		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		REV. C SHEET 1 OF 1 SCALE NTS	
COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND NOT BE LOANED, REPRODUCED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD.			



# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061 T67D.3125W.058  
 DATE: 18/11/12

PO / BATCH NO.: P0041405/S126576

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 1084  
 QUANTITY INSPECTED: 1084  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.3125"  
 THICKNESS RECEIVED: 0.3125"  
 SHEET SIZE ORDERED: —  
 SHEET SIZE RECEIVED: —

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(Y) N	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(Y) N	
CORRECT MATERIAL PER M-DRAWING	(Y) N	AMS 4082
CORRECT THICKNESS	(Y) N	
PHOTO REQUIRED	Y (N)	
CORRECT REF # TO LINK CERT	(Y) N	HT:2927553
CORRECT MATERIAL IDENTIFICATION	(Y) N	
CORRECT M# ON THE MATERIAL	(Y) N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D	WEBSTER
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

*testers located in the Quality Office*

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>AT</u>	SIGNED OFF BY: _____	
DATE: <u>18/11/12</u>	DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# KAISER ALUMINUM FABRICATED PRODUCTS

## CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
6573 W. WILLIS ROAD  
CHANDLER, AZ 85226

CUSTOMER PO NUMBER: M49383418-1		CUSTOMER PART NUMBER: 42588		PRODUCT DESCRIPTION: Drawn Seamless Tube/Pipe	
KAISER ORDER NUMBER: 225211	LINE ITEM: 001	SHIP DATE: 03/03/2018	KAISER LOT NUMBER: F00262536	ALLOY: 6061	TEMPER: T6
WEIGHT SHIPPED: 638.000 LB	QUANTITY: 230.000 PCS	B/L NUMBER: 228717	DIAM/DAF/THKNS:	WIDTH:	LENGTH: 12.000 FT
SHIP TO:  TW METALS INC 235 WEST TUBEWAY DRIVE CAROL STREAM, IL 60188 USA			SOLD TO:  TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA		

### Actual Physical Properties

REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON% IACS	BEND
F00262536	0001	0001	48.0	43.2	19.0	N/A	N/A	N/A
F00262536	0001	0002	48.0	43.2	19.0	N/A	N/A	N/A

### Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
D30862	.58	.24	.22	.03	.92	.07	.07	.02	.00	.00	.00	.01	.02

### Applicable Requirements:

Description: OD: 0.6250"; Wall: 0.1250"; Round @  
AMS4082P AMS-WW-T-700/6C ASTM B210-12 WW-T-700/6F  
WE TAKE EXCEPTION TO PARA. 5.2.1., Per AMS4082P, WAS NOT OILED.  
This Product Complies to FAR BAA, DFARS BAA, FAR TAA  
COMPLIES TO DIN EN 10204 JAN 2005  
No Weld Repair. Mercury Free.



### Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA  
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA  
(DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5  
TRADE AGREEMENTS).

Plant Serial: 00027581  
Kaiser Order Number: 225211  
Line Item: 001

# **KAISER ALUMINUM**

**FABRICATED PRODUCTS**

*Best in Class*

## **CERTIFIED TEST REPORT**

<http://Online.KaiserAluminum.com>

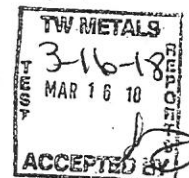
KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
6573 W. WILLIS ROAD  
CHANDLER, AZ 85226

### **CERTIFICATION**

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager

*[Signature]*



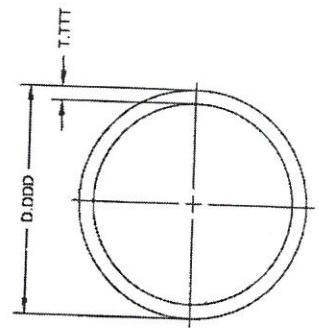
Plant Serial: 00027581  
Kaiser Order Number: 225211  
Line Item: 001

PURCHASE MATERIAL:  $\triangle C$  6061-T6/62/16510/16511 SEAMLESS TUBING

SPECIFICATION: WW-T-700/8  
OR QQ-A-200/8 OR QQ-A-225/8  
OR AMS 4083 OR AMS 4082 OR AMS 4083  
OR ASTM B210 OR ASTM B241

PART NUMBER: M6061T6T/P.DDD/JWT.TTT  
OD WALL

WHERE "D.DDD" = OD IN INCHES  
"T.TTT" = WALL THICKNESS  
EG. 3/8" OD X 0.058 WALL = M6061T6T0.375W0.058  
MATERIAL TOLERANCE: PER ANSI H35.2  $\triangle C$



RELEASED  
2013-07-02

C	COMPLETE REFORMAT, ADDED T6510 & T6511. ADDED AMS 4083, ASTM B210 & ASTM B241 ADDED MATERIAL TOLERANCE	AJS	13.06.12
B	ADD QQ-A-200/8 & QQ-A-225/8	CP	04.01.23
A	NEW ISSUE	DS	01.08.21
REV.	DESCRIPTION	BY	DATE
DESIGN	AJS		
DRAWN	AJS		
CHECKED	W		
MFG. APPR.	W		
APPROVED	W		
DE APPR.	W		
DATE	13.06.12		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. M6061T6T			
TITLE 6061-T6 TUBING			
SHEET 1 OF 1			
SCALE NTS			
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# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061 T6 T0-625W-125

PO / BATCH NO.: P0041405/S126577

DATE: 18/11/12

MATERIAL CERT REC'D: Yes

THICKNESS ORDERED: 0.625"

QUANTITY RECEIVED: 12 ft

THICKNESS RECEIVED: 0.625"

QUANTITY INSPECTED: 12 ft

SHEET SIZE ORDERED: -

QUANTITY REJECTED: 0

SHEET SIZE RECEIVED: -

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/> N	
CORRECT FINISH	<input checked="" type="checkbox"/> Y N	
CORROSION	Y <input checked="" type="checkbox"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> Y N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/> Y N	<u>AMS 4082</u>
CORRECT THICKNESS	<input checked="" type="checkbox"/> Y N	
PHOTO REQUIRED	Y <input checked="" type="checkbox"/> N	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> Y N	<u>HT: F00262536</u>
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> Y N	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> Y N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="checkbox"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="checkbox"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D	WEBSTER
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

*testers located in the Quality Office*

## QC 18 INSPECTION

## ENGINEERING SIGNOFF (if required)

INSPECTED BY: AT

SIGNED OFF BY: \_\_\_\_\_

DATE: 18/11/12

DATE: \_\_\_\_\_

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in